

6153188

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CGGCTGTGTGCGCAGTCTTCAATGGGTTCACGAGGAGGTCTCTGTGGCTGCGGCGGC 60

TGCTAACTGCGCCACCTGCTGCAGCCGTGTCCCGCCGCTCTGAAGCGCGCGTCTGAAGC 120

M P P P R T G R G L L W L G L V L S S 19
CGAAATGCCGCCACCCGACCGGCCGAGGCCCTTCTCTGGCTGGTCTGGTCTGTGAGCTC 180

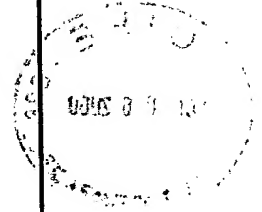
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V C V A↓ L G↓ S E T Q A N S T T D A L N V 39
CGTCTGCGTCCCTCGGATCCGAAACGCAGGCCAACTCGACCACAGATGCTCTGAACGT 240

L L I I V D D L R P S L G C Y G D K L V 59
TCTTCTCATCGTGGATGACCTGCGCCCCCTCCCTGGGCTGTTATGGGGATAAGCTGGT 320

A ————— A

Figure 1A



A_____A

R S P N I D Q L A S H S L L F Q N A F A 79
GAGTCCCCAAATATGACCAACTGGCATCCACAGCCTCCTCTTCCAGAATGCCCTTGC 360

Q Q A V C A P S R V S F L T G R R P D T 99
GCAGCAAGCAGTGTGCGCCCCGAGCCGCTTCTTCTCACTGGCAGGAGACCTGACAC 420

*

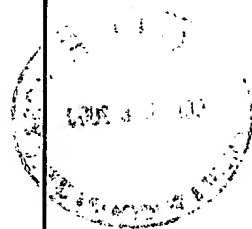
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T R L Y D F N S Y W R V H A G N F S T I 119
CACCCGCTGTACGACTTCAACTCCTACTGGAGGTGCACGCTGGAAACTTCTCCACCAT 480

P Q Y F K E N G Y V T M S V G K V F H P 139
CCCCCAGTACTCAAGGAGAAATGGCTATGTGACCATGTGCGTGGGAAAGTCTTTCACCC 540

B_____B

Figure 1B



B-----B

*

G I S S N H T D D S P Y S W S F P P Y H 159
TGGGATATCTTCTAACCATAACCGATGATTCTCCGTATAGCTGGTCTTTCCACCTTATCA 600

P S S E K Y E N T K T C R G P D G E L H 179
TCCTTCCTCTGAGAAGTATGAAAACACTAAGACATGTCGAGGGCCAGATGGAGAACTCCA 660

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A W L L C P V D V L D V P E G T L P D K 199
TGCCAACTGCTTTGCCCTGTGGATGTGCTGGATGTTCCCGAGGGCACCTTGCCCTGACAA 720

Q S T E Q A I Q L L E K M K T S A S P F 219
ACAGAGCACTGAGCAAGCCATACAGTTGTTGGAAAAGATGAAAACGTCAGCCAGTCCTTT 780

C-----C

Figure 1C



C-----C

F L A V G Y H K P H I P F R Y P K E F Q 239
CTTCCTGGCCGTGGGTATCATAGCCACACATCCCCTTCAGATACCCCAAGGAATTCA 840

*

K L Y P L E N I T L A P D P E V P D G L 259
GAAGTTGTATCCCTTGGAGAACATCACCCCTGGCCCCCGATCCCGAGTCCCTGATGGCCT 900

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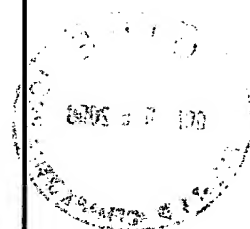
P P V A Y N P W M D I R Q R E D V Q A L 279
ACCCCTGTGGCCTACAACCCCTGGATGGACATCAGGCAACGGGAAGACGTCCAAGCCTT 960

*

N I S V P Y G P I P V D F Q R K I R Q S 299
AAACATCAGTGTCCGTATGTTCCCAATTCCTGTGGACTTTCAGCGGAAAAATCCGCCAGAG 1020

D-----D

Figure 1D



D-----D

Y F A S V S Y L D T Q V G R L L S A L D 319
CTACTTTGCCCTCTGTGCATATTGGATACACAGTCGGCCCTCTTGAGTCTTTGGA 1080

*

D L Q L A N S T I I A F T S D H G W A L 339
CGATCTTCAGCTGGCCAACAGCACCATCATTTGCATTTACCTCGGATCATGGTGGGCTCT 1140

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G E H G E W A K Y S N F D V A T H V P L 359
AGTGAAACATGGAGAATGGCCAAATACAGCAATTTTGATGTGTGCTACCCATGTTCCCT 1200

I F Y V P G R T A S L P E A G E K L F P 379
GATATTCTATGTTCCCTGGAAGGACGGCTTCACTTCCGGAGGCAGCGAGAAAGCTTTTCCC 1260

E-----E

Figure 1E



E ————— E

Y L D P F D S A S Q L M E P G R Q S M D 399
TTACCTGACCCCTTTGATTCCGCCTCACAGTTGATGGAGCCAGGCAGCAATCCATGGA 1320

L V E L V S L F P T L A G L A G L Q V P 419
CCTTGGAACCTTGTCCTCTTTTCCACGCTGGCTGGACTTGCAGGACTGCAGGTTCC 1380

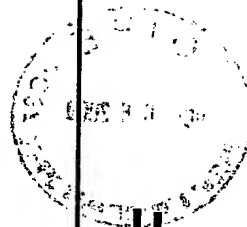
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P R C P V P S F H V E L C R E G K N L L 439
ACCTCGCTGCCCCGTTCCCTTCATTTACGTTGAGCTGTGCAGAGAGCAAGAACCTTCT 1440

K H F R F R D L E E D P Y L P G N P R E 459
GAAGCATTTTCGATTCCGTGACTTGGAGAGGATCCGTACCTCCCTGGTAATCCCCGTGA 1500

F ————— F

Figure 1F



F_____F

L I A Y S O Y P R P S D I P Q W N S D K 479
ACTGATTGCCCTATAGCCAGTATCCCCGGCCTTCAGACATCCCTCAGTGGAAATCTGACAA 1560

P S L K D I K I M G Y S I R T I D Y R Y 499
GCCGAGTTTAAAGATATAAAGATCATGGGCTATTCCATACGCACCATAGACTATAGGTA 1620

*

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T V W V G F N P D E F L A N F S D I H A 519
TACTGTGGGTTGGCTTCAATCCTGATGAATTTCTAGCTAACTTTTCTGACATCCATGC 1680

*

G E L Y F V D S D P L Q D H N M Y N D S 539
AGGGGAACTGTATTTTGTGGATTCTGACCCCATTCAGGATCACAAATATGTATAATGATTC 1740

G_____G

Figure 1G



G-----G

Q	G	G	D	L	F	Q	L	L	M	P	
											550
CCAAGTGGAGATCTTTCCAGTTGTTGATGCCCTTGAGTTTGGCCAACCATGGATGGCAA											1800
ATGTGATGTGCTCCCTTCCAGCTGGTGAGAGGAGGAGTTAGAGCTGGTCGTTTGTGATT											1860
ACCCATAATATTGGAAGCAGCCTGAGGGCTAGTTAATCCAAACATGCATCAACAATTGG											1920
CCTGAGAATATGTAAACAGCCAAACCCTTTTCGTTTAGTCTTTATAAAATTATAATTGGT											1980
AATTGGACCAGTTTTTTTTTAAATTTCCCTCTTTTAAACAGTTACGGCTTATTACTG											2040
<u>AATAAATACAAAGCAAACTCAAGTTATGTATACCTTTGGATACGAAGACCATACA</u>											2100
TAATAACCAACATAACATTATACACAAGAATACTTTCATTATTGTGGAATTAGTGC											2160
ATTTCAAAAAGTAATCATATATCAAACTAGGCACCACACTAAGTTCCTGATTATTTGTT											2220
TATAAATTTAATAATATCTTATGAGCCCTATATATTCAAAATATTATGTTAACATGTAA											2280
TCCATGTTTCTTTTCC											2297

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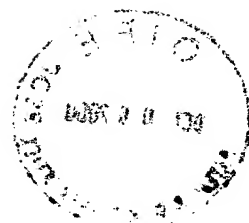


Figure 1H

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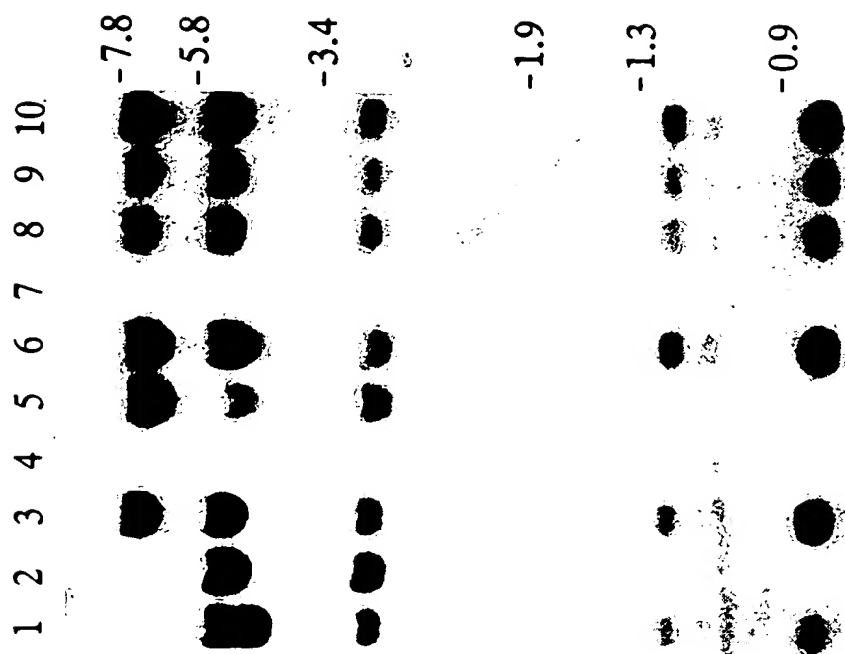


Figure 2A

Figure 2B

2 MPPPRTGRGLLWLGLVSSVCVALGSETQANST

6

A MGAPRSLLLALAAAGLAVA

B MGPRGAASLPRGPGPRRLLPVVLPLLLLLLAPPGSGA

C MPLRKMKIPFLLLLFFLWEAES

U MKSAPFLFLLGLLVTAQTQDPALLDLLRENPDLLSLLLQSNHR

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2 TDALNVLLIIIVDDLR-PSLGCYGDKLVRSPNIDQLASHSLLFQNAFAQQAVCAPSRVVSFLTGR

6 TRRPNVLLLLTDDQD-EVLGGMTPLKKTALIGEM--GMTFSSAYVPSALCCPSRASILTGR

A RPPNIVLIFADDLGYDGLGCYGHPSSTPNLDQLAAGGLRFTDFYVPVSLCTPSRAALLTGR

B GASRPPHLVFLAADDLGWNDVG-FHGSRI RTPHLDALAAGGVLLDNYTQ-PLCTPSRSQLLTGR

C HAASRPNIILVMADDLGIGDPGCYGNKTI RTPNIDRLASGGVKLTQHLAASPLCTPSRAAFMTGR

U APLVKPNVLLVADDMGSGDLTSYGHPTQEAGFIDKMAAEGLRFTNGYVGDAVCTPSRSAIMTGR

*

*

*

A _____ A

Figure 3A

A-----A

2 RPDTRLYD-----FN-----SYWRVHAGNFSTIPQYFKEN-GYVIMSVGKVFFHPGISSNHT
6 YPHNHHVVN-----NTLEGNCSKSWQKIQEPNTFPAILRSMCGYQITFFAGK-YLNEYGAPDA
A LPVRMGMP-----GVLV-----PSSRGGPLLEEVTVAEVLAAR-GYLTIGMAGK-WHLGVG-----
B YQIRTGLQH-----QIIW-----PCQPSCVPLDEKLLPQLLKEA-GYTIHMOVGK-WHLGMY-----
C YPVRSGMASWRTGVFL--FTASSGGLPTDEITFAKLLKDQ-GYSTIALIGK-WHLGMSCHSK
U LPVRIGTFG--ETRVFL--PWTKTGLPKSELITIAEAMKEA-GYATIGMOVGK-WHLGMNENSS

* * * * *

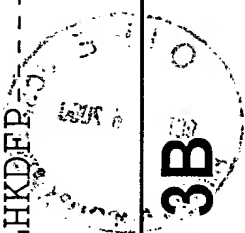
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2 DDSP-----YSWSFPPYHPS-SEKYENTKTCRGPDGE-----LHA
6 GGLEHVPL--GWSYWAYALEKNS--KYNYTLSINGKARK-----H
A PEGAFLLPHQGFHRFLGIPYSH-DQGPCQNLTFCPPATP-----C
B RKEC-LPTRRGFDYFGYLLGS-EDYYSHERCTLIDAL-----N
C TDFCHHPLHHGFNYFYGISLTNLRDCKPGEVFTTGFKRLVFLPLQIVGVTLTLA
U TDGAHLPFNHGFD-FVGHNLFP-TNSWSCDDTGLHKDEF-----D

* * *

B-----B

Figure 3B



B-----B

2 NLLCPVDVLDVPEGTL PDKQSTEQAIQLLEKMKTSASPF~~FLAVGYHKPHIPFRYPKEFQKLY~~

6 GENYSVDYLTVDLA-----NVSLDF-----LDYKSNFEPPFF

A DGGCDQGLVPIPL-----

B VTRC-----ALD-----

C ALNC-LGLLHVPLG-----VFFSLLFLAALILTLFLGF-----LHYFRPLNCF-

U SQRC-----YL-----

* * *

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2 -----PLENITLAPDPEVPDGLPPVAYNPWMDIRQR--EDVQALNISVPYGPPIPVDF

6 MMIATPAPHSPWTAAPQYQKAFQNVFAPRNKNFNIH--GTNKHWLI-----RQAKTPM

A -----LANLSVEAQPPWLPGLEARYMAFAHDLMADAQRQDRPF~~FLYYASHH~~THYPQ

B -----FRDGEVATGYKNMYSTNIFTKRAIALITN-HPPEKPLFLYLALQSVHEPL

C -----MMRNYEIIQQPMSYDNL~~TQRLTV~~EAAQFIQ--RNTETP~~LLVLSYLHVHTAL~~

U -----YVNATLVSQPYQHKGLTQLFTDDALGFLE~~D--NHADPFFLYVAF~~AHMHTSL

* * * *

C-----C
Figure 3C

C-----C

2 -----QRKIRQSYFASVSYLDTQVGRLLSALDDLQLANSIIIAFTSDHGWALGE
6 TN-----SSIQFLDNAFRKRW-QTLLSVDDLVEKLVKRLEFTGELNNIYIFYTSDNGYHTG-
A -----FSGQSFASGRGPFGLMELDAAVGTLMTAIGDLGLEETLVIFTADNGPETMR
B QVPEEYLKPYDFIQDKNRHHYAGMVSLMDEAVGNVTAALKSSGLWNNIVFIFSTDNGGQTL-
C -----FSSKDFAGKSQHGVIYGD AVEEMDWSVGQILNLLDELRLANDTLIYFTSDQGAHVEE
U -----FSSDDFSCTSRRGRYGDNLLEMHDAVQKIVDKLEENNISENTIIFFI SDHGP HREY

* * * * *

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2 HGEWAKYSNFDVATHVPLIFYVPGRTASLPEAGEKLFYPYLDPPFDSASQLMEPGRQSM
6 -----QFSL-----PIDKRQLYEFDIKV-----PLLVRGP GIK-PNQT SK
A MS-----RGGCSGLL-----RCGKGTTYEGGVRE-----PALAFWP GHIAPGVT-H
B -----AGGNNWPL-----RGRKWSLWEGGVRG-----VGFVASPLLKQGVKNR
C VSSKGEI---HGGSNIGIY---KGGKANNWEGGIRV---PGILRWPRVIQAGQKID
U CE-----EGGDASIF-----RGGKSHSWEGGHR I---RYIVYWP GTISPGIS-N

** * * * *

D-----D

Figure 3D

D-----D

2 DLVELVSLFPTTLAGLAGLVPPRCVPVPSFHVLCREGKNLLKHFRFRDLEEDPYLPGNPREL
6 MLVANIDLGPITLIDAGYDLNKT-QMDGMSL-----LPILRGASNLWRSDDL
A ELASSLDLLPTLAALAGAPLPNV-TLDGFDL-----RPPAAGHRQEPSAVSLL
B ELIHISDWLPTLVKLARGHTNGTKPLDGFV-----WKTISEGSPSP-RIELL
C EPTSNMDIFPTIVAKLAGAPLPEDRIIDGRDL-----MPLLEGKSQRSDHEFLF
U EIVTSMIDIATTAADLGGTTLPDTRIYDGKSI-----KDVLLLEGASAP-HSSFF

* * * * *

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2 IAYSQYPRPSDIPQWNSDKPSLKDIKIMGYSIRTIDYRYTVWVG-----
6 VEYQGEGRNVTDPTCPSLSPGVSCFPDCVEDAYNNTYACVRTMSALW-NLQYC--
A LPVLPRRGWGFCCAD-----WKVQGSLLHPGSAHSDTTAD-----PAC--
B HNIDPNFVDSSPCPRNSMAPAKDDSSLPEYSAFNTSVHAAIRHGNWKLTLTGYPGCGY
C HYCNAYLNAVRWHPQNSTIWKAFFFTPNFNPVGSNGCFAT-----HVC--
U YYCKDNLMAVRVGKYKAHFTQQRVRSQDEYGLECAGG-FPL-----EDY--

E-----E

Figure 3E

E-----E

2 - FNPDE--FLANFSDIHAGE-----LYFVDSDFLQDHNMY--NDSQGGDLFQLLMP
6 -----EFDDQEVFVEVYNLTADPDQITNI---AKTIDPELLGKMNYRLMMLQS
A -----HASSSLTAHEPP---L-LYDLSKDPGENYNLLGGVAGATPEVLQALKQLQLLKAQ
B WFPPPSQYNVSEIPSSDPPTKTLWLFDIDRDPFEERHDL---SREYPHIVTKLLSRLQFYHKKH
C -F-----CFGSYVTHHDPP---L-LFDISKDPFRERNPL---TPASEPRFYEILLKVMQEAADR
U -FDCND-CEGDCVTEHDPP---L-LFDLHRDPGEAYPL--EACGHEDVFLT VKSTVEEHKAA

** * * * *

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2
6 CSGPTCRTPGVFDPGYR-FDPRLMF-----SNRGSVTRRRFSKHLL
A LDAAVTFGPSQVARGE---DPALQICCHPGCTPRPACCHCPDPHA
B SVPV--YFPAQ-----DPR-----CD-----PKATGVWGPWM
C HTQTLPEVPDQFSWNNFLWKPWQLCCP-----STGLSCQCDREKQDKRLSR
U LVKGTPLLDSDHHSIVPCCNPANGCICNYVHEPGMPECYQDQVATAARHYRP

*

Figure 3F

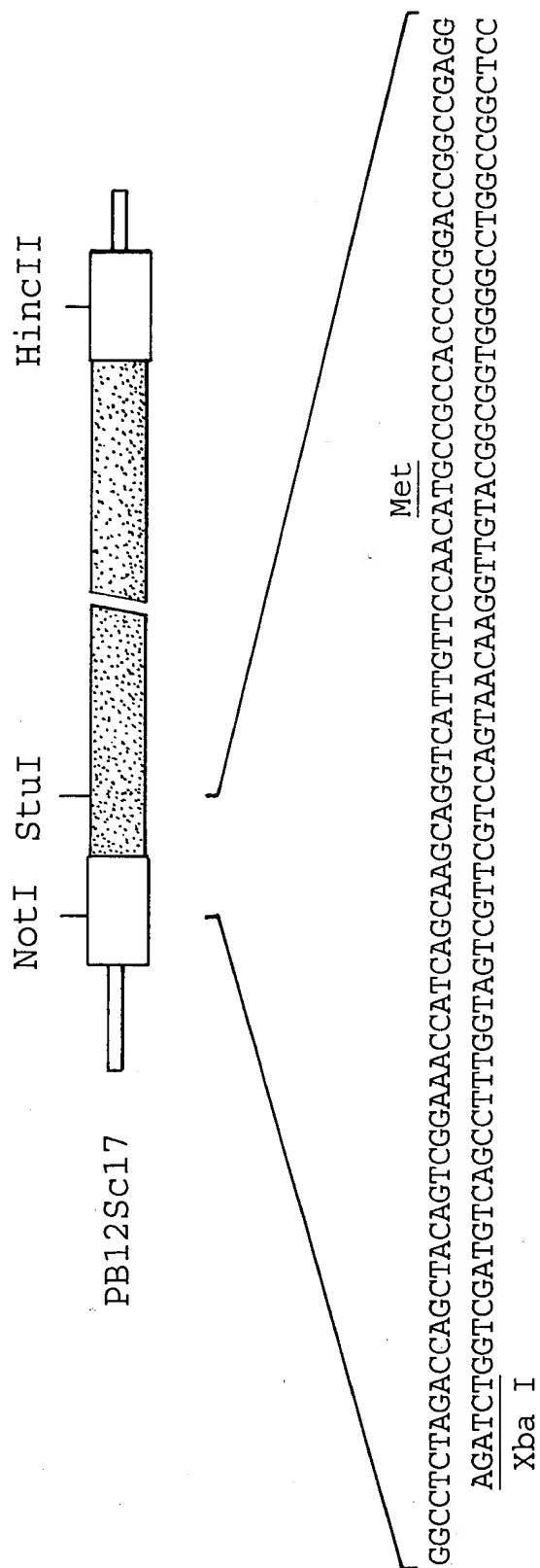
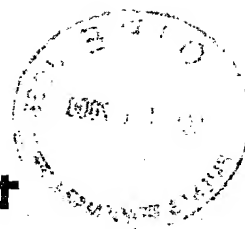


Figure 4



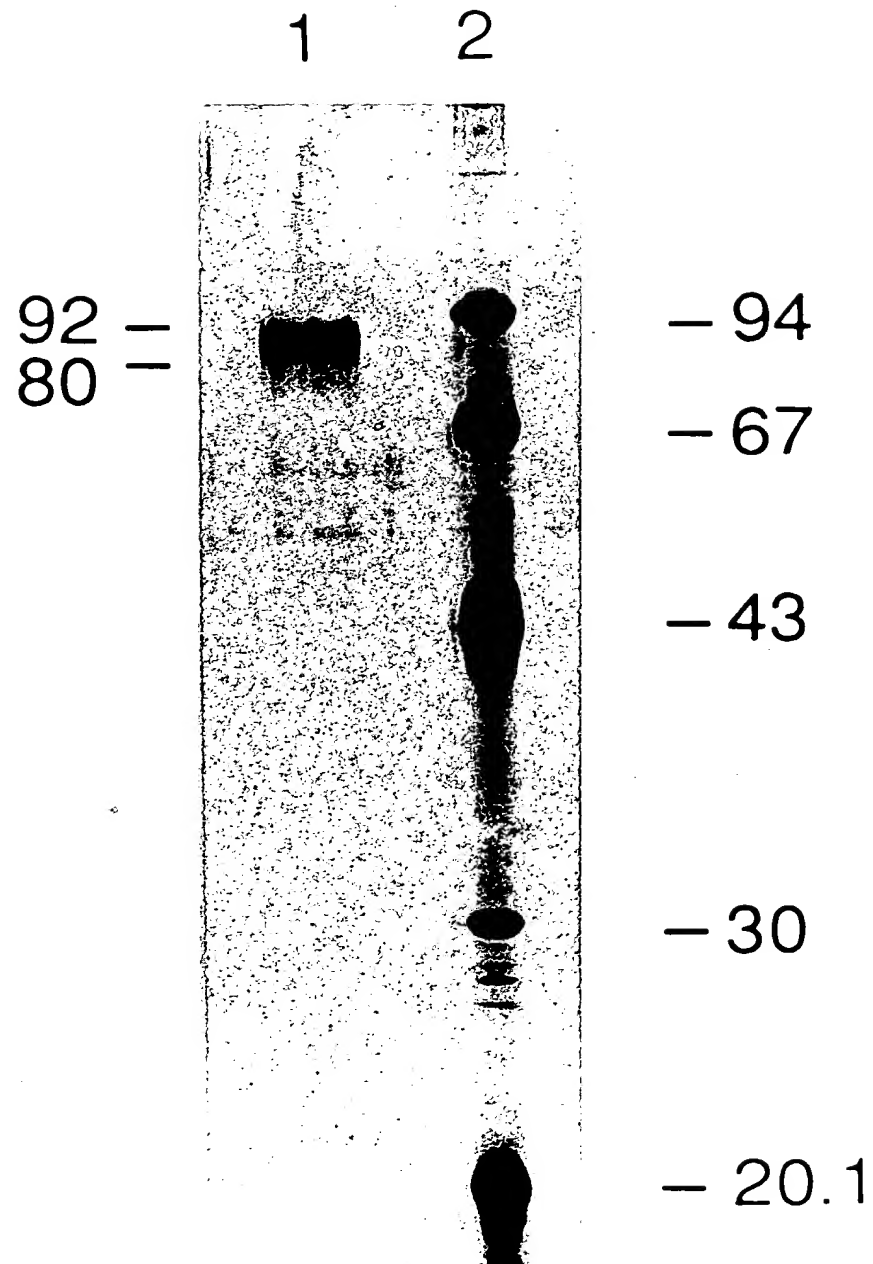


Figure 5

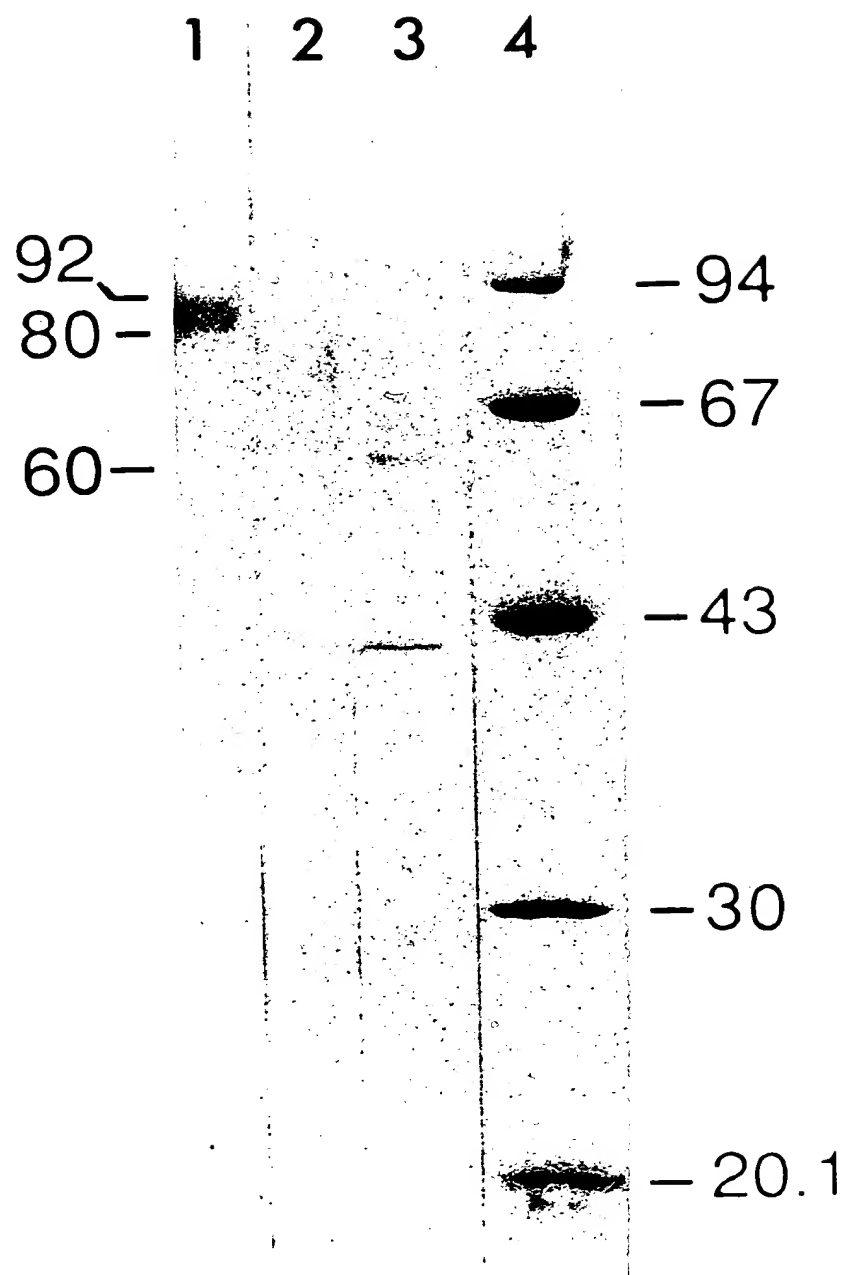


Figure 6

[illegible]

Figure 7A



A_____A

ttacctcaccaaagccccctccctcctgtgtag.....**exonII**...ATGCTCTGAACGTTCTTCTCA
TCATCGTGATGACCTGCGCCCCCTCCCTGGGCTGTTATGGGATAAGCTGGTGAGGTCCCCAAATATT
GACCAACTGGCATCCACAGCCTCCTCTCCAGAAATGCCCTTTGCGCAGgtatgtctgggaacctctag
ctgtgggtgtgctgcttcgtgcaactgaggggtggggcgaggagcttcagctattgtcagatggca
cagattgtcggggacatcttgttagaggggaagcatagctggaaa..**intron2**..agggcgggttgct
tggttacctaagagatggcagacatgttttgctgtggcgatgcttacctctgcttctgctccctaaca
g.....**exonIII**..CAAGCAGTGTGCGCCCCGAGCCGCGTTTCTTCCCTCACTGGCAGGAGACCTG
ACACCACCGCCTGTACGACTTCAACTCCTACTGGAGGGTGCACGCTGGAAACTTCTCCACCATCCCC
CAGTACTTCAAGGAGAAATGGCTATGTGACCATGTGCGGTGGGAAAAGTCTTTCACCCCTGgtactgctcc
atgtccagagtctgggttctcttggttctggtgtctgantccagcattcccatcctggggatgggct

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B_____B

Figure 7B



B_____B

gtctttgcagagccctcttctggctgggcgagtcctcgctagtcagtgtct..**intron3**...tttgta
gatgaggaaactgagccccaaagaaggaggntccacttgcccatcttggttacagagttttaattatg
gggagtggggtgttgaaagactcatcatgtttttaacaaccttttttttttccaag.....**exonIV**
..GGATATCTTCTAACCATACCGATGATTCTCCGTATAGCTGGTCTTTTCCACCTTATCATCCTTCCT
CTGAGAGTATGAAAACACTAAGgtaggctgtgaaaggagacatttctgaagaggaaaccactttttccc
tttgtcacataaaactactgggtatactgcatgtgtnctgtgaagctggttatataccacgaagtgtgtggg
tttcatttgtgataaatgttttgacagaagtaagt.....**intron4**..tggtcagtcctgagtacta
acacgtgaagggtgattatgtgaacattaaatctgtgtgtgtagccttcatggcttcatntcttgca
cttaaaaagctgatgttatattttgttttgaaag..**exonV**..ACATGTCGAGGGCCAGATGGAG
AACTCCATGCCAACCTGCTTTGCCCCGTGGATGTGCTGCCGAGGGCACCTTGCCTGACAAA

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C_____C

Figure 7C



C_____C

CAGAGCACTGAGCAAGCCATACAGTTGTTGGAAAAGATGAAAACGTCAGCCAGTCCTTTCTTCTCTGGC
CGTTGGGTATCATAGCCACACATCCCCCTTCAGATACCCCAAGtgaagagctgggtgagggctgac
cagcacagctgtacagctgtgtgtgtgtgaggagggttgcacaggggaaggtggctacatcct
gccatcgccaggcaccatggtgcctgatgggcactagtgtcctcagtggaagaaagatgggatttag
aggt.....intron5...aaaaggcagtatagacagtgatagagccacaagcttgcttttgctaaa
agagtgacaaactttgtggctttgtgttttcccccaag...exonVI...GAATTCAGAAAGTTGTATC
CCTTGAGAACATCACCCCTGGCCCCCGATCCCGAGGTCCCTGATGGCCTACCCCTGTGGCCTACAAC
CCCTGGATGGACATCAGGCAACGGGAAGACGTCCAAGCCTTAAACATCAGTGTGCCGTATGGTCCAAT
TCCTGTGGACTTTCAGgtatcaaggacatagtttggggatgtattggacactgatgacatagtgctgt
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D_____D

Figure 7D



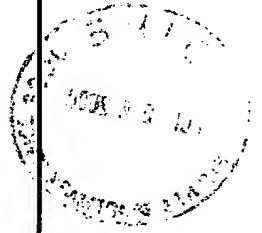
D_____D

g..**intron6**..tagggattgggagagatgcacaggaagcattatctctgtatgccttggcaattt
aaattgcagtcactctcatcttatttttttcaatttgag.....**exonVII**..CGGAAATCCGC
CAGAGCTACTTTGCCCTCTGTGCATATTGGATACACAGGTCGGCCGCTCTTGAGTGCTTTGGACGA
TC TTCAGCTGGCCAACAGCACCATCATTTGCAATTACCTCGGATCATGtaagcattttgaaattccct
ggtgagtcaaaacatctgaactttcctgtgaaacatgctttgcaaaattgccattgacataaacatgg
gtgtg..**intron7**..tttcttctaggtgatgagtttctacttcctctggtttttacaacaggaaatg
aaatggtatctaaaataaacaagctgtggtatgatgattattcattttctgtcattctgtgcttttta
tgaactag..**exonVIII**..GGTGGGCTCTAGGTGAACATGGAGAATGGCCAAATACAGCAATTTGA
TGTTGCTACCCATGTTCCCTGATATTCTATGTTCTGGAAGGACGGCTTCACTTCGGAGGCAGGCG
AGAAGCTTTTCCCTTACCTCGACCCCTTTTGATTCCGCCTCACAGTTGATGGAGCCAGgtataaaatat

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E_____E

Figure 7E

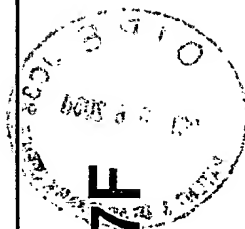


E_____E

gctgaaatgatatgtgtgacagtaagatcacctttagttatatgtgaaccactttattgaatcata
ggctttggggttacacagacccc...intron8...aaagataaatggtgtaaatataaaaaagaaaac
atatggagcccagacagggtcctttactgctcctgcctggccatggcaggctttataatgtaaccca
ttctgctctgtcgcttcctgtttcag..exonIX..GCAGGCAATCCATGGACCTTGTGGAACCTGTG
TCTCTTTTCCACGCTGGCTGGACTTGCAGGACTGCAGGTTCCACCTCGCTGCCCCCGTTCCTTCATT
TCACGTTGAGCTGTGCAGAGAAGGCAAGAACCTTCTGAAGCATTTTCGATTCCGTGACTTGGAAAGAGG
ATCCGTACCTCCCTGGTAATCCCCCGTGAACTGATTGCCCTATAGCCAGTATCCCCGGCCTTCAGACATC
CCTCAGTGGAATTCTGACAAGCCGAGTTTAAAGATATAAAGATCATGGGCTATTCCATACGCACCAT
AGACTATAGGTATACTGTGTGGGTGGCTTCAATCCTGATGAATTTCTAGCTAACTTTTCTGACATCC
ATGCAGGGAACTGTATTTTGTGGATTCTGACCCATTGCAGGATCACAAATATGTATAATGATTCCCAA

F_____F

Figure 7F



F_____F

GGTGGAGATCTTTCCAGTTGTTGATGCCCTTGAGttttgccaaaccatggatggcaaatgtgatgtgct
cccttccagctggtgagaggaggaggttagagctggtcgttttgtgattaccataatatgggaagcag
cctgagggctagttaatccaaacatgcatcaacaatttggcctgagaatatgtaacagccaaacctttt
tcgtttagtcctttattaaaaatttataatttggttaattggaccagtttttttttaatttccctcttttt
aaaacagttacggcttatttactgaataaaatacaaaagcaaaactcaagttatgtcatacctttgg
atcgaagaccatacataataaccaaataacattatatacaaaagaataactttcattattttgtggaa
tttagtgcatttcaaaaagtaatcatatatcaaactaggcaccacactaagttcctgattattttgtt
tataatttaataatatcttatgagccctatatattcaaaaatatattgttaacatgtaatccatgtt
tcttttttcc

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Figure 7G

